Customer No.: 31561
Application No.: 10/604,510
Docket NO.: 9843-US-PA

AMEDMENTS

In The Claims:

Claim 1.(currently amended) A method for decoding disc information, comprising the steps of:

receiving an original data signal and a clock signal;

modulating the original data signal when a duration of the same status of the original data signal is less than a minimum transit period of the clock signal, so as to obtain a guaranteed-waveform data signal, wherein the duration of the same status of the guaranteed-waveform data signal is greater than the minimum transit period of the clock signal , comprising:

generating a first reference data signal according to the original data signal, wherein the first reference data signal lags behind the original data signal, and the two signals differ by at least one reference lag period of the clock signal; further, a rising edge of the first reference data signal is generated fixed on a transit edge of the clock signal, and the duration of the same status of the first reference data signal is greater than or equal to the minimum transit period of the clock signal;

delaying the first reference data signal so as to obtain a second reference data signal, wherein the two signals differ by one period of the clock signal; and

if the duration of the same status of the original data signal is less than the minimum transit period of the clock signal and is caused by the original data signal being lagged behind the transit, the first reference data signal is used to generate the guaranteed-waveform data signal; otherwise, the second reference data signal is used to generate the guaranteed-waveform data signal; and

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continuously decoding by using the guaranteed-waveform data signal and the clock signal,

so as to obtain the disc information.

Claim 2. (canceled)

Claim 3. (currently amended) The method for decoding the disc information of claim 21,

wherein the method for determining whether the original data signal lags behind the transit or not,

comprises the steps of:

counting a number of the rising edge of the clock signal that appears in the duration of the

same status of the original data signal according to a rising edge of the clock signal, so as to

obtain a rising edge counting value;

counting a number of the falling edge of the clock signal that appears in the duration of

the same status of the original data signal according to a falling edge of the clock signal, so as to

obtain a falling edge counting value; and

when the rising edge counting value is greater than the falling edge counting value, it is

determined that the original data signal lags behind the transit.

Claim 4.(currently amended) The method for decoding the disc information of claim 21,

wherein the reference lag period is 1.5 period of the clock signal.

Claim 5. (currently amended) The method for decoding the disc information of claim 21,

wherein the transit edge is either a rising edge or a falling edge of the clock signal.

Claim 6. (original) The method for decoding the disc information of claim 1, wherein the

minimum transit period is 3 periods of the clock signal.

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